

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Group Art Unit: 1774

Paul B. Merkel et al

Examiner: Pamela R. Schwartz

Image-Recording Element With  
Fluorosurfactant And Colloidal  
Particles

Serial No. 10/622,421

Filed 18 July 2003

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**REPLY BRIEF PURSUANT TO 37 C.F.R. 41.41**

In response to the Examiner's Answer mailed September 20, 2007,  
Appellants submit the following further arguments.

In the "Grounds of Rejection" section of the Examiner's Answer, in the 3<sup>rd</sup> rejection (page 7, lines 13+), the Examiner includes claims 22-34 in the statement of the rejection over Tsuchiya et al alone, but then indicates that the rejection of claim 33 over Tsuchiya et al alone has been withdrawn. Clarification is respectfully requested. Further comments below will be based on the assumption such claim 33 was inadvertently not removed from the statement of the rejection.

In the "Response to Argument" section of the Examiner's Answer, regarding rejections based on Nakano et al, the Examiner disagrees with Appellant with respect to whether the dispersed fine particles of Nakano et al would be considered anionic or cationic, with the Examiner stating that untreated silica is anionic and there is nothing to indicate that the silica of Nakano et al has been surface modified. Initially, it is respectfully pointed out that both anionic and

cationic colloidal silica are known (as evidenced, e.g., by the Examiner's new citation to Sismondi et al. EP 1080934), and Nakano et al does not indicate which type is to be employed in the invention thereof. Further, even if the references to colloidal silica itself in Nakano et al were assumed to refer to anionic colloidal silica as a starting material in view of the Examiner's comments that the "silica of Nakano et al would be considered anionic by one of ordinary skill in the art since untreated silica is anionic", Nakano et al in fact does teach to treat the fine particles by milling in the presence of a cationic dispersant (e.g., paragraph bridging cols. 25 and 26). As dispersants function by attaching to the surface of the particles to be dispersed, the fine particles of Nakano et al will acquire a cationic surface charge associated with such attached dispersant, especially at the relatively low pH of the coating solutions A of Nakano et al (see, e.g., col. 27, lines 46-49). Accordingly, as Nakano et al clearly teaches the use of a cationic dispersant for the fine particles employed therein, it is respectfully urged that Appellant has demonstrated that Nakano does not teach use of anionic colloidal silica particles in the coating solution for an accepting layer as taught therein.

The Examiner further argues, despite the express preference in Nakano et al for use of fine particle having an average primary particle diameter of 50 nm or less, that one of ordinary skill in the art would have read the disclosure of Nakano et al as suggesting a range of particle size extending beyond 50 nm, and that it would have been obvious to optimize particle size and particle size distribution (apparently, in the Examiner's view, to result in the present claimed invention requirement of particles having a median diameter of between 80 and 200 nm). The Examiner further argues that criticality of the claimed size range cannot be determined because Appellants have failed to vary only one parameter while holding all others constant. As explained in the Brief, however, Table VII on page 30 in the specification of the present application demonstrates that the use of anionic colloidal particles having the claimed particle size and narrow size distribution provides the advantages of higher gloss, faster dry time, good image quality, and improved coating quality, with the Comparative examples provided in the present specification clearly demonstrating the advantage of the claimed invention relative to the use of smaller particles when employing anionic colloidal particle dispersions, even when the relatively smaller particles also have relatively

narrow size distributions (see, e.g., Comparative Elements 11 and 12), while Nakano et al's preference would suggest that smaller particles should be employed to optimize gloss and dry time. This is clear evidence of the criticality of the present invention employing anionic colloidal silica particles, as opposed to the cationic dispersant treated fine particles employed in Nakano et al. The criticality of the claimed particle size parameter in the present claimed invention relative to the teachings of Nakano et al is thus clearly demonstrated, and the Examiner's continued comments that such criticality cannot be evaluated is clearly without merit.

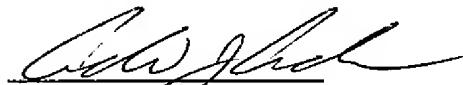
The Examiner's further comment that the particle size range of Table VII is not a value recited by the claims and that comparative data should have been expressed in the precise terms of the claim parameters to which they pertain is also without merit, as the alleged "missing" comparative data (whether 80% of the particles have a diameter of within 35% smaller or larger than the median diameter) is clearly provided in the written descriptions of each of the Elements 14-20 and Comparatives 8-12 at pages 26-30. Finally, the Examiner's contention that a direct comparison cannot be made between the preference in Nakano et al of an "average" particle diameter of 50 nm or less to the claimed mean diameter of between 80 and 200 nm is also clearly without merit, as the Examiner has not provided any explanation as to why such preferred "average" of Nakano et al would make "obvious" the claimed "mean" particle size, and further as Appellant has presented comparison examples which actually do compare invention and comparison examples based on mean particle diameter.

Regarding rejection of claim 33 over Tsuchiya et al and Nakano et al, the Examiner now argues that it would have been obvious to one of ordinary skill in the art to adjust the surface pH of the coloring agent accepting layer of Tsuchiya et al to from 3 to 8 in order to avoid yellowing discoloration as taught by Nakano et al. Nakano et al, however, while citing the broader pH range of from 3 to 8, actually teaches only that the pH adjustment is done by addition of acid, and further that a surface pH of from 5 to 7.5 is preferred for such reason (col. 16, line 48). As the components of the coating solutions of Tsuchiya et al are already highly acidic (see, e.g., col. 11, line 3), the resulting surface pH will likewise be acidic, and there would be no need for further acid

addition to adjust the surface pH as may be suggested by Nakano et al., and certainly no suggestion based on the teachings of Nakano et al to add base to the coatings of Tsuchiya et al to adjust the pH to between 8 and 10 to advantageously provide image recording elements in accordance with the present invention with the best performance in terms of gloss, dry time, and image quality as explained in the paragraph bridging pages 15-16 of the instant specification. Accordingly, Tsuchiya et al in view of Nakano et al does not teach or suggest the present claimed invention.

For the above reasons in combination with those set forth in the main Brief, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the rejection by the Examiner and mandate the allowance of Claims 1, 4, 6-8, 11-12, and 22-34, along with additional dependent objected-to claims 13-15.

Respectfully submitted,



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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.